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ABSTRACT

The nature of on-going instructional processes and pupil experiences were studied in two classes of a British infant school. Using PROSE (Personal Record of School Experience) as the primary observation instrument, 24 children, aged five through seven years, equally divided as to sex, were observed during seven days. A total of 9 cycles and 45 events were recorded for each of the children. The events relate to the nature of contacts (verbal or nonverbal) that the child has with adults, peers, and materials. Results of the study are provided as to: General Organizational Patterns; Teacher Behavior and Expectancies; Teacher Questioning; Instructional Teaching and Content; Manifest Teacher Affect; Pupil Behavior; Adult Contacts; Peer Contacts; Task Involvement and the Nature of Tasks; Manifest Affect of Pupils; and Pupil Behavior Differences. Some of the noteworthy findings are: (1) certain teacher expectancies were apparent in directions given and behavior reinforced; (2) for about half of each school day, children were involved in projects and activities of their own choosing, with teachers providing general supervisory and tutorial assistance; (3) the most dominant type of teacher activity during these periods was listening to children and raising questions about activities and progress; (4) some teacher differences were seen in showing-telling activities and in controlling behavior; (5) over the entire school day, children interacted with an adult 29.3% of time on the average, with a peer 20.4%, with appropriate tasks 28.2%, and were inappropriately engaged 22.1% of the time. The study data are given in 17 tables. [Filmed from best available copy.] (DB)

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AN OBSERVATIONAL INVESTIGATION OF INSTRUCTION AND BEHAVIOR IN AN INFORMAL BRITISH INFANT SCHOOL

(Full Report - April 1972)

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In his searching critique of the American classroom, Silberman (1970) strongly endorses the British infant school as one model for improving American education. Recent interest has been expressed by many others, furthermore, in the "open-classroom" style of teaching in general and the British infant school pattern in particular. Despite considerable descriptive writing, however, only limited objective information exists regarding the precise nature of instructional processes and learning activities in such a school.

Resnick (1971) made a start at gathering objective data on infant school life but limited her focus to the nature of teacher behavior in one school. A full, empirically derived description of daily activities, teacher expectancies, pupil tasks and outcomes, organizational variations from one classroom or school to another, and other important features of this educational model has yet to be attempted.

In the present study a comprehensive assortment of descriptive data on an infant school was gathered in an effort to understand the nature of ongoing instructional processes and pupil experiences. Although teacher behavior was included, considerable information was obtained on pupils and the types of contacts they had with adults, peers, and materials. In addition, many situational data were procured, and audio recordings were made of certain teacher-led class discussions.

METHOD OF OBSERVATION

The investigator spent three weeks during the spring, 1971, in an infant school in Northwest London. During this time he visited all 6 regular classrooms*, made anecdotal notes of ongoing activities, and filled out a teacher interaction checklist** in several rooms in order to have some basis of comparison with the two classes which were to receive the greatest attention. Discussions were held frequently during lunch and other breaks with teachers and especially the head teacher regarding general organizational features of the school, the nature of the community, specific materials and activities, and other such matters. Teachers were given a general briefing on the kinds of data to be gathered and were allowed to see and react to them after they had been collected. All teachers saw the teacher interaction data obtained, and both teachers in whose rooms audio taping was done asked to hear the tapes.

Permission was granted to the observer not only to roam freely and record whatever he saw but, after he showed teachers the kinds of data he was collecting, to use it for research and even teaching purposes as long as names would not appear in print. The openness of these teachers to this stranger's microscope was most appreciated.

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* A seventh classroom (the "reception class") was not observed because the teacher was in her first year of teaching and the pupils were younger than children in other groups, being limited to 5 year olds and under.

**Appreciation is expressed to my colleagues, Richard Abidin and Wendy Golladay for the development of this action checklist.

The two classrooms which became the principal data sources were chosen after initial visitation to all rooms, because the teachers were the most experienced (from 5 to 10 years) ones in the building and seemed especially receptive to an observer's presence.

The primary observation instrument used was PROSE (i.e., Personal Record of School Experience), developed by Medley, Schluck, and Ames (1968)*. This instrument consists of a recording sheet for each child and a manual of instructions describing 148 behavior and setting categories to be used by an observer in coding ongoing classroom activity. With PROSE, the observer focuses on one child at a time for approximately two minutes each; and, using a timing device, he codes whatever categories of behavior he sees occurring at each 25-second point-in-time for five consecutive intervals. After each cycle of five such behavioral events, the observer ignores the timing signal and codes a number of relatively static conditions and contextual variables prevalent during the 100-second total observation period. Another child is then focused on, a new recording sheet is used, and the entire process is repeated.

Categories covering the behavioral events relate to the nature of contacts (verbal or non verbal) the child has with adults, peers, and materials. For adult contacts, who the adult is; what the adult is doing; who initiates the contact; whether the child is contacted as an individual

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* A revised edition of this instrument has subsequently been produced by Medley, Quirk, Schluck, and Ames (1971).

or as part of a group; whether the contact is primarily physical, through materials, verbal, or non verbal; and the sex and ethnic group of the contacting person in relation to the child are all noted.

For peer contacts, who initiated the contact; what the nature is of both the target child's behavior and that of the peer; whether the contact is physical, through materials, verbal, or nonverbal; and the sex and ethnic group of the group of the peer are noted. For contacts with materials and tasks rather than people, the nature of the task is coded. In addition, mobility and physical activity of the child are coded as well as positive or negative affect, if it is apparent.

Setting conditions to be noted during a cycle* include the instructional content area, the role of the teacher and other adults, the location of the child in relation to the teacher, the size of group he is in, and the general noise level of the class. Also to be recorded if they are observed are (a) such behaviors of the target child as using words or numbers, asking a peer for help, disobeying and a host of other specific behaviors that sometimes occur during a cycle and (b) use by the child of various kinds of materials, such as food, puzzles, games, or musical instruments. For a complete list of categories with operational definitions for coding, the instructional manual must be consulted.

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* The 25-second point-in-time behavior events are coded on several sets of categories appearing on the front side of the PROSE Sheet, which will be referred to as behavior category sets or merely category sets. Context and behavior variables appearing on the back side and coded only after the 100-second interval will be referred to as cycle category sets.

Except for the lunch period, the observer used PROSE rather continuously throughout the school day for three or four days in each of two classrooms. As children ranged from ages five through seven in each of these rooms, in accordance with the general principle of "family grouping" followed in many infant schools, a stratified random sample (by age and sex) was chosen from each room; i.e. two boys and two girls from each of three age levels. The total number of children observed in both classrooms was 24*. Each child in a classroom was observed in preselected order for one cycle of five events, covering approximately two minutes per child. As soon as the record sheet was completed following a cycle and the next child could be spotted by the observer, recording was begun again. In this fashion observation was continued throughout the school day with between two and three cycles (10 to 15 behavioral events) completed for each child. A total of 9 cycles and 45 events were recorded on each of the 24 children during seven days of concentrated use of PROSE. While initiation of observation of children did not follow a precise schedule of predetermined times, the procedure used was rather continuous, and children were observed in whatever activity they happened to be engaged in whenever their turn came up. Thus, it can be argued that a representative sample covering the entire school day was obtained and a particular child's nine cycles approximated a random assortment of his total school experiences on these days.

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* These children, hereafter, will be referred to as target children.

Inter-observer reliability coefficients could not be obtained in the infant school because of the lack of a second trained observer. However Sherman (1971) reports 92 to 98 percent agreement between two observers with similar amounts of training when they were using PROSE to code children's behavior simultaneously in an American classroom.

The audio tapes of teacher-led class discussions were analyzed by developing a list of teacher statement categories and tallying the types of statements made in particular recorded episodes. A Pearson coefficient of 0.87 resulted from correlating the classification frequencies obtained from the investigator's categorization of teacher statements with those obtained from an independent coder. Two independent codings of the same material by the same person also resulted in a 0.87 correlation coefficient.

RESULTS

General Organizational Patterns

Certain similarities prevailed from one room to the other in types of activities, grouping patterns, and teaching style. At least half of each day was spent in informal, self-selected activities, during which time children worked independently, in pairs or in small groups on tasks they chose to perform. At any particular moment one might find (a) three or four youngsters (more frequently, boys) at the work bench with hammers and saws making boats, planes, or something else of their choosing; (b) several girls and maybe a boy in the playhouse area engaging in phantasy activity with dolls, dress up clothes, toy kitchen equipment and supplies; (c) several children finger painting on a large table covered with newspapers;

(d) three or four looking at or reading books taken from the library corner; (e) two or three brush painting at easels in the hall or outside on nice days; (f) several playing quiet games at a table, which might require the use of numbers or written words; (g) one putting word puzzles together; (h) three youngsters modeling clay objects; (i) two others filling bottles at the water box and faucet; (j) five children copying items, writing or illustrating stories in their personal notebooks; (k) and three youngsters making buildings out of blocks on the floor. This range of materials and activities is typical of those described in a number of books about the British infant schools (Cushen, 1966; Howson, 1969; Ridgway & Lawton, 1965; Rogers, 1970). During these independent activity periods the teacher moved from one child or group to another inspecting closely what was going on, raising questions about what children were doing, occasionally making suggestions or lending assistance, and generally monitoring the entire group. She often used this time also to listen to children read or to go over written work in their notebooks. She called one child at a time to her side from whatever activity he was currently engaged in and tried to spend some time individually with each child in this manner each day.

Many of the tasks possessed intrinsic instructional value. For example, several children might be seated at a table with bags of shells, acorns, and other objects. Several balance-type scales might also be located on the table and the children's task would be to make up simple equations, which they would write in their notebooks, by weighing various objects in relation to other objects. After performing this task for a few minutes, for instance, a child might have written:

4 acorns = 5 shells

4 acorns = 3 marbles

2 acorns = 9 raisons

Sometimes the tasks might take the form of structured problems which the child was to write and answer in his notebook while using the scales, such as:

1. Do 5 shells weigh more than 12 raisons?

2. Do 7 acorns weigh more than 5 marbles?

With creative products children would often be asked to show them to the class and tell about them in some detail. Then, if they were capable, the teacher would suggest they write stories about their creation in their notebooks. If they were not able to write, the teacher might write their stories for them, letting children make illustrations and later having them "read" their stories to the class. Thus, many direct experiences children had with materials and equipment in class were used to stimulate them to talk, write, and/or read about at later times.

The remainder of the school day was taken up with (a) games and physical play or movement activities in outside areas when the weather permitted or in the large multipurpose room when it did not; (b) group stories and discussions; (c) "show and tell" periods when accomplishments and experiences from other periods were shared, as well as out of school experiences; and (d) brief school-wide assemblies. Frequently, parts of several classes might be combined for particular purposes so that all children had some direct contact with teachers from other than their own classrooms. Also, several groups might be combined to watch an educational television show

on some particular subject. The observer saw several such lessons during his visit, one dealing with different kinds of time units for example.

During independent activity periods, children were usually free to engage in whatever activities they wished, to shift from one to another when they desired a change, to move about the room and even the building as they saw fit, to talk with other children or watch them at work, and in general to determine how they would spend their time. This apparent freedom had certain general limits, however. Children were expected to put back materials and equipment they had been using and were usually not permitted to disrupt the ongoing activity of others. Before climbing on playground equipment they were supposed to put on special soft-sole shoes, and before painting or working with clay they were required to put on smocks to protect their clothes.

Teacher Behavior and Expectancies

As already indicated, much of the teacher's behavior consisted of brief encounters with one child or a small group of children as she inspected their work, monitored their play, and listened to them read. Her questions, directions, suggestions, and reinforcements usually related directly to the specific tasks with which children were occupied.

Because of this rather informal style of teaching, the observer kept track of the specific nature of directions given and behaviors reinforced, in order to discern whatever teacher expectancies seemed to be frequently expressed. Several became apparent.

1) Children were generally expected to have something to do. The teacher would usually ask a child what he was doing, if she noticed him wandering aimlessly around the room or holding extended conversation with another child, who was busy at his own task. At the beginning of independent activity periods she almost always asked if anyone did not know what he planned to do and then discussed the options with him until one was selected.

2) Children were generally expected to finish something already started before starting something else. If a child showed the teacher a picture he was painting of some flowers, for instance, she might ask him what color he wanted for the sky or what other kinds of things grew in his garden. Although questions were raised in this fashion, the teacher did not insist on particular details being added; but the child often added to his picture in line with the kinds of responses he made to her questions.

3) Children were expected to have something tangible to show or tell to account for time spent. Notebooks were inspected frequently and creative products were displayed before the group with the teacher usually remarking about the progress made.

4) Children were expected to take care of materials being used and return items to their proper places and conditions after using them. As it was late in the school year, the observer saw children habituated to proper cleaning up patterns; but occasionally he heard the teacher ask who had been using something that was left ou as a reminder of this expectancy.

5) Children were expected to participate in group discussion and to permit others to talk. Many times when one child was telling about an experience that others had shared, the teacher would stop others from talking

until the target child was finished.

Brown and Precious (1968) and Silberman (1970), among others, have commented on the highly active role of the British infant teacher, especially as it contrasts with the laissez faire manner advocated by Holt (1967), Kohl (1969) and other current critics or represented in the American child-centered schools of the 1920's and 1930's. Resnick's data (1971) generally confirm this high teacher activity rate in the school she studied, with teachers having approximately one extended interaction (usually teacher-initiated) and from 4 to 8 brief interactions (usually child-initiated) with various children every three minutes.

This observer tallied teacher interaction patterns for two 10-minute periods in each of four classrooms and found a slightly higher rate of teacher activity than Resnick, i.e. approximately three per minute during regular independent activity periods. During group discussions, when teachers were eliciting news, reactions, and experience sharing from children, this rate was usually even greater (see the analysis of teacher questioning patterns below).

Teacher behavior was most precisely recorded on the PROSE instrument (a) at the end of each 100-second cycle in which a child was observed (cycle category set #2) and (b) at those moments when a target child was observed in contact with the teacher (category set #3). With several closely related categories combined for ease of presentation, Table I presents the findings for teacher role categorizations following observation cycles. For the two teachers combined, over three out of five observations found the teacher in a relatively nondirective role supervising children's

activities, acting as a resource person when children initiated contact, and being concerned with behavior management, if necessary. Another 11 per cent of the time she was not even in contact with the children, being out of the room or busy with other matters. Only about one-fourth of the time was she involved either in discussion leadership or in showing, telling or more generally leading most of the class in some large group activity.

A chi square analysis of the frequency data in Table I, furthermore, indicates that teacher A exhibited significantly greater use of a supervisory-managerial-resource teaching style and less use of a showing-telling-leading-discussion teaching style than teacher B. Although similar PROSE data were not obtained on other teachers, teacher interaction checklist tables confirmed the fact that in all three of the classrooms (including teacher B's) in which this latter interaction checklist was used, children initiated contact with teachers more often then teachers initiated contact with children, thus supporting the general notion that children had a great deal of independence or action. In one of these classrooms, C-initiated was over three times as frequent as T-initiated interaction.

The precise teacher behavior exhibited in classrooms A and B is more explicitly indicated in Table II, which is based on categorization of the teacher's behavior during those instances when a target child was in contact with the teacher. Overall, listening and questioning was the most frequently occurring type, accounting for approximately three out of every five of teacher A's actions and one out of every four of teacher B's actions. Again a significant difference ($p < .05$) was found between the two teachers,

teacher B making somewhat greater use of showing-telling and controlling categories and less use of the listening-questioning type of behavior.

The PROSE instrument provides space for coding a child's contacts not only with his regular teacher but with other adults as well. On many days a teacher trainee or a teenage aide was also present in most classrooms. Occasionally, classes or parts of classes were combined for particular purposes under the direction of another teacher in the same building. The head teacher often conducted assembly programs, for instance, involving the entire school. Not infrequently the narrator for a radio or television program represented the adult instructional director of a class, with regular teachers in a subsidiary role. In all, 57 contacts (38.3 per cent of all adult contacts) were observed for target children in teacher A's class and 38 contacts (24.1 per cent of all adult contacts) in teacher B's class with other such adults. The predominant nature of these other adult contacts was of the showing-tell and controlling varieties (84.3 percent with teacher A's class and 89.5 percent with teacher B's class). This finding is not surprising as the primary purpose for regrouping classes or exposing them to other teachers was to conduct specific instruction for particular purposes.

Teacher Questioning

As indicated above, the dominant teacher activity in classroom A was was the listening-questioning pattern. Often this took the form of a child showing his teacher something he was working on; asking for assistance, information, or permission; or telling about an experience he had had. Although the teacher occasionally provided information, reaction, or

direction, more often the teacher's response consisted of raising questions designed to draw the child out further with respect to his feelings, plans, or experiential details. Hughes (1959) maintains that such elicitation of additional thinking in response to students bringing up potential instructional content represents the essence of good teaching. In the classrooms she studied, however, she found it occurred infrequently, accounting for less than 20 percent of most teachers' behavior.

Because of the greater evidence for this type of behavior in the British infant school, it seemed important to study the specific types of questions teachers raised. A tape-recording was made of a "show and tell" class discussion teacher A conducted one Monday morning. Although weekend experiences constituted a major portion of the content for this period, children were permitted to bring up anything that seemed important to them. Children were encouraged to talk by such opening questions as: "Who has something he wants to tell us." The teacher would ask a child responding a number of questions about the experience until a rather full elaboration of details covering the experience was forthcoming. Typically, this listening and questioning on the part of the teacher took the form of an open dialogue between the child and his teacher; other children were permitted to ask questions, furnish additional details (if they had been involved also), and make related comments only after the particular child involved seemed to have completed his story. The teacher would often hush another child momentarily with such remarks as: "We are listening to John now. Your turn will come." At other times she would purposefully bring other children into the discussion by asking such questions as? "Who else has been to see

the Cutty Sark (i.e., item being described)?"

This particular morning the "show and tell" period was kept going for over an hour, until almost all 40 children had shared one or more experiences and until obvious restlessness appeared.* The types and frequencies of questions and comments made by the teacher during one interval of 10 minutes, 18 seconds and a second interval of 8 minutes, 15 seconds are presented in Table III. It is readily apparent that while the greatest number of questions asked were requests for more specific details (#3) about the event being described or related information regarding the child or his family, the teacher raised a considerable variety of questions and comments in the conduct of this discussion. Quite often (15 and 19 per cent) she merely asked the child to repeat what he had said (#2) ("What did you say?") or asked automatically for reaffirmation of a statement or the feeling being expressed ("Did you?" "Was she?"). Spontaneous evaluative reactions (#10) ("I see". "How lovely.") constituted 9 to 10 per cent of her remarks and tended to keep the child talking, probably by providing reinforcement for what he was saying. Speculating on event details (#9) occurred more frequently in the first than the second discussion sequence, most likely reflecting differences in the story telling abilities of children. With one rather slow speaking child particularly, she tended to anticipate words or phrases before they occurred ("You fell in the water". "You didn't dare tell your mother.") This anticipation did not seem to cause the child

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* The teacher kept this session going considerably longer than usual in order to provide the O with a full record. Despite this dissimilarity from her usual pattern of questioning, no other differences were apparent. A high consistency of teacher questioning patterns was found ($r = .80$) between two separate 10-minute periods during the hour, even though topics and children reporting were different.

to stop telling his story; he merely nodded yes or no, or corrected the teacher if she were wrong and continued it.

The rather low percentage of comments directed toward other children (#11 with #6 excluded to which they were supposed to respond) exemplifies the dialogue quality of the interaction with the one child who was speaking at the time. It also reflects the general attention other children had in this dialogue, as statements directing other children to listen or wait their turn to speak were classified here.

One other finding with regard to the teacher's questioning was its high rate. An average of 8.3 teacher comments or questions were made per minute during both "show and tell" episodes analyzed, which was over twice the rate of overall teacher interaction reported earlier for independent activity periods.

Instructional Teaching and Content

Much has already been said in regard to the informal nature of teaching and the manner in which teachers often allowed and encouraged pupils to choose what they would do or talk about. Some of the time, however, more formal instruction and control pervaded (see Table II), in which teachers or other adults presented them with information, read stories, led group discussions, or otherwise directed class activities closely.

Additional data reporting instructional patterns and emphasis were recorded on appropriate PROSE cycle categories. These categories were designed to cover some of the classroom setting variables and the kinds of materials and equipment used by the child.

Particularly relevent were notations made regarding the instructional content area receiving general emphasis. Table IV presents these data as they were recorded in the two classrooms over 108 cycles each.

The most obvious finding was further documentation of statements made earlier that independent activity (i.e. free play) accounted for half of the daily schedule.* This fact emphasizes one of the weaknesses of PROSE, however, as a means for describing full content coverage in an infant school. During independent activity, children select from the many options available those which they will attempt. Most of these options, of course, lie within other content areas. Therefore a particular child may choose to make a painting (art or craft category) while another may choose some number games (arithmetic category). For a more complete assessment of content emphasis, an observer would have to record the areas each child was engaged in, rather than the overall instructional area which the PROSE manual suggests.

In spite of this limitation certain generalizations can be drawn from Table IV. Language is the area which received the greatest emphasis in terms of formal instruction in each classroom. Class discussions focused on language usage or expressing ideas, unless they were clearly related to other areas; story reading; word games; and "show and tell" periods, where the emphasis was primarily on eliciting child verbalization were usually classified as language activities. They occupied approximately one-fifth of the total time in each room. At least on the days observed, science received greater formal instruction emphasis in one class and music or rhythms, in the other.

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* Exclusive of the 1 1/2 hour lunch and recreation period.

Further elaboration of the content emphases can be found in the section below which relates to pupil behavior and the nature of tasks, equipment, and materials to which children were exposed. Even here, however, a complete inventory of tasks and materials was not attempted.

Manifest Teacher Affect

The final analysis of teacher behavior relates to classroom climate in general and expressed teacher affect in particular. Although much can be surmised already from the preceding reports of classroom organization and teaching patterns, several additional sets of data are particularly relevant.

Following each 100-second behavior cycle, the observer estimated the emotional and motivational state of the class as a whole during that cycle. Table V reports these judgments in number of cycles per climate category for each of the classrooms. As no significant differences ($p > .05$) were apparent between the classrooms, the main generalization to be drawn from this table is the predominance of a noisy busy atmosphere over other categories. In the eyes of the observer, children were busy and task oriented most of the time, even though considerable talking and other sounds also prevailed. There was little apparent idleness and no observable tension. Admittedly, this set of judgments requires a more qualitative type of rating than probably any other PROSE scale. A rough check on the validity of these estimates can be obtained by noting the amount of behavior characterized as distracted, responding to internal stimuli, disruptive (#8), the amount of peer interaction (#4, #5) and other relevant PROSE categories

reported in the pupil behavior section below.

Cycle category set #7 requires checking any instances of teachers calling for quiet, threatening children, losing their tempers, laughing with pupils, or using physical restraint. In all 216 behavioral cycles, only teacher A was observed exhibiting any of these behaviors. She was noted calling for quiet 5 times. Overall signs of class disorganization or turmoil seemed almost neglible.

Another indication of classroom climate can be noted by examining again the categories of teacher behavior presented in Table II. At no time during the 212 moments when a target child was observed in contact with his teacher was she exhibiting positive affect toward a child, and only twice was one teacher observed exhibiting negative affect, even though these two categories, according to the PROSE instructions, are to be given recording precedence over other categories when they are observed.

Perhaps the most discriminating data with respect to teaching climate came from the teacher interaction checklist used in four classrooms, including those of teachers A and B. Table VI presents the number and types of reinforcements exhibited. Overall, more than twice as much approval as disapproval was observed. Teacher A provided more than three times as much approval as disapproval and teacher B exhibited no evidence whatever of disapproval. Only teacher C provided more disapproval than approval during the relatively brief period of observation. Again the high rate of teacher A's activity is noted. The total amount of reinforcement she provided during the 20 minute observation period was almost as great as that of the other teachers combined (31 compared to 42 instances). She also tended to use

a wider variety of ways for expressing approval or disapproval than the other teachers.

Pupil Behavior

Sufficient descriptive data are available from the PROSE notations to provide a reasonably full picture of how target pupils spent their time. A total of 45 observations (9 cycles of 5 behaviors) were recorded in the manner described earlier for each of the 24 children.

At a given moment four mutually exclusive possibilities existed for the overall classification of a child's behavior: (a) He was in contact with an adult (#1); (b) he was in contact with a peer (#4); (c) he was involved with an appropriate task; or (d) he was distracted, responding to internal stimuli, working on an inappropriate task, or actively disrupting others (#8, exclusive of the cooperating category). Table VII presents the number of behaviors classified for each child for each of these possibilities.

Over the entire group of 1080 observations, children were found to be (a) in contact with an adult 29.3 per cent of the time; (b) in contact with a peer 20.4 per cent; (c) involved with an appropriate task 28.2 per cent, and (d) distracted, responding to internal stimuli (i.e. wandering aimlessly or day dreaming), or working on an inappropriate task 22.1 per cent of the time. No significant differences ($p > .05$) were found between the two classrooms in the general distribution of behavior among these four general types of behavior, although considerable variation was apparent among the individual children as will be reported later in this paper.

While directly comparable data on similar age children are not yet available from other schools, PROSE data are beginning to appear in various research reports which suggest interesting comparisons for future comparative studies. The amount of peer interaction (ie, 20.4 percent) found in the British school was almost twice that reported in two sets of data covering a rather substantial number of preschool classrooms for four- and five-year old American children (Griffith, Neff, & Ahlstrom, 1971; ETS, 1969. Also, a rather brief set of PROSE observations made recently by one of our students (Massey, 1972) in second- and eighth- grade Russian classrooms indicates almost no amount of peer interaction. Obviously, differences in the ages of children and perhaps some differences in the use of PROSE preclude stating strong inferences regarding program differences from such data, but the possibilities for solid comparative research in the future would seem promising.

Adult Contacts

Table VIII presents the distribution of adult-child contacts across the four types of behavior covered by PROSE (#1). It is apparent that almost two-thirds of the contacts were made as the adult was attending to a group of children of which the target child was a member. This might be only a two-person group, a larger size group, or the entire class. In less than 5 percent of the observations was the target child singled out and the adult attending to him differently than to any other child (star category). This finding is not surprising when one considers the rather large number of children present in the classrooms (37-40). Child-initiated

contact with adults and individual adult attention on the target child (star), when added together, occurred more frequently ($p < .05$) in teacher A's than teacher B's classroom, suggesting a somewhat greater emphasis on individualized teaching in the former.

Peer Contacts

The nature of peer contacts by target children is presented in Table IX. Approximately one-third of these contacts were initiated by target children and well over half of them were categorized as cooperative behaviors in relation to the actions of the peers involved. The general harmonious nature of these relationships was further borne out by the very small amount of aggressiveness, withdrawal or resistance observed. The combined totals for these three categories accounted for less than 7 percent of all pupil-pupil contacts. No significant differences ($p > 01$) were found between the two classes in the frequency or type of peer interaction.

Task Involvement and the Nature of Tasks

Several category sets provided data in regard to the nature of tasks and related pupil involvement. As indicated above, pupils were not in direct contact with peers or adults during approximately half of the observations. For over half of this latter amount (28.2 percent of the total), they were observed in some type of appropriate behavior, either self-selected or teacher designated. The remaining behavior (22.1 percent of the total) would probably be considered as inappropriate or, at least, non involved with respect to the regular school offerings.

Table X presents the extent of pupil involvement in ongoing activities (#8). The vast majority of observations in which category set #8 was not

used were pupil-pupil contacts. The manual requires the use of this category for adult contact and material contact situations only.

Overall, children were observed to be cooperating 70.8 percent of the times in which category set #8 was used. Disruptive behavior was non existent and working on other activities was neglible. Being distracted (13.0 percent), often momentarily, and responding to internal stimuli (15.2 percent) accounted for almost all of the non attention to tasks and ongoing activities. No significant differences ($p > .05$) were found between the two classrooms in either the total amount of attending behavior (i.e. cooperating) or in types of non attention. The relatively high amount of attention to tasks and ongoing activities provides additional documentation for the generalization made earlier that, despite considerable noise, pupils were usually busily engaged in appropriate behavior and the classroom climate was that of purposeful industry.

The nature of tasks, of course, varied considerably from one pupil to the next. Table XI shows this variation in terms of whether tasks and activities demanded primarily (a) fantasy type responses, in which pupils engaged in dramatic play (i.e. pretended to be someone else); (b) divergent responses, in which the pupil was permitted freedom in defining the nature of his goals and a variety of behaviors was acceptable; (c) convergent responses, in which only certain reactions or end-products were correct; (d) work on some socially useful task (sweeping the floor, for example); or kinesthetic behavior, in which repetitive motions (pushing a drawer in and out several times, for example) prevailed without any apparent sense of purpose other than to be doing something.

Consistent with the notion that considerable freedom of expression prevails in infant schools, tasks and activities permitting divergent responses were the most frequently observed type in each of the classrooms. Overall, they accounted for 38.4 percent of the task categorizations, whereas convergent tasks represented 28.4 percent of the classifications, kinesthetic, 13.9 percent; work, 12.9 percent; and fantasy, 6.4 percent. A significantly greater ($p < .05$) proportion of divergent, kinesthetic, and work types of tasks were seen in teacher A's classroom; and a greater proportion of fantasy activity was observed in teacher B's classroom. In the two previously mentioned studies of American preschool classrooms (Griffith et al, 1971; ETS, 1969), convergent tasks were most frequently observed. Children were involved with divergent tasks an average of 25 percent of the time in eight "basic" classrooms and, as might be expected, only 9 percent of the time in two Montessori classes (same teacher) in one study. In the other study of 30-40 classes, they were involved with divergent tasks an average of 34 percent of the time, only slightly less than in the British school. Again dissimilarities in research methodology, program objectives, and ages of the children suggest caution in the interpretation of these differences.

Primary age youngsters are noted for their high rate of activity and energy expenditure. PROSE category set #9 provided data with respect to the locomotion and estimated physical activity levels of target pupils. The findings are presented in Table XII.

Surprisingly perhaps, physical activity was not as great as anticipated. Locomotion was observed only 15.5 percent of the time. In 59.1 percent of

the time no activity at all was seen at the moment of recording. Children in teacher A's classroom exhibited significantly greater ($p < .05$) activity and locomotion than those in teacher B's classroom, perhaps reflecting their teacher's high reactivity rate commented on earlier (see p 19).

Two sets of cycle categories provided additional information relevant to the types of activities pupils experienced. For one of these (cycle category #6) the observer merely checked on a rather extensive list any specific behaviors which he had observed for the target pupil during the 100-second interval he had been watching him. Several of these specific behaviors provided information about the kinds of tasks and activities with which he was confronted. Table XIII presents those behaviors which indirectly provided such task information and the frequencies with which they were observed. Although using numbers and performing chores were noted rarely, target pupils were observed using words in approximately one-third of the 216 total number of cycles.

The other relevant cycle category (#8) provided considerably more task information. On an extensive list of equipment and materials, the observer checked those which target pupils made use of during observation cycles. The frequencies with which these materials were used are presented in Table XIV. Books and writing materials were obviously the most frequently used items in both classrooms. They were used half as much as all other types of materials combined. The next most frequently used items were clay, paint and other art materials. Although frequencies are too small to generalize with certainty, somewhat greater interest in musical instruments and puzzles and quiet games seemed to prevail in teacher B's classroom and

greater interest in gym and exercise equipment in teacher A's classroom. Perhaps the most obvious generalization to be made from Table XIV is that children made use of a great variety of materials and equipment during the several days of observation. Only one type of equipment, namely wheel toys, was not put to use at all by target children during the observation cycles.

Manifest Affect of Pupils

Much has been made by Silberman (1970), among others, of the happiness and enthusiasm displayed by British pupils during the course of infant school activity. PROSE category set #11 provided some data to determine the extent of positive and negative manifest affect. In addition, many of the specific behaviors contained in cycle category set #6 were equally relevant (cried, singing or talking to self, showed affection for adults or peers, for example).

Data obtained from target children through notations made on these categories were generally in support of Silberman's evaluation but perhaps not as extensively as might be supposed. A total of 20 manifestations of strong feelings were seen and recorded on category set #11 for target children, all of them positive. This is not a large number when one considers the total number of behavioral episodes covered, namely 1080; but what affect was expressed was clearly positive.

In addition, singing or talking to self was noted in 8 out of the 216 cycles. During these cycles, furthermore, not a single instance was observed of a target child crying, losing his temper, showing fear, or otherwise expressing hostile or negative feelings.

Pupil Behavior Differences

A Q factor analysis was performed in order to examine pupil behavior patterns.* The subject-by-variable raw data matrix was transposed, thus inverting the role played by subjects and variables. A 24 x 24 correlation matrix was generated where each correlation coefficient represented the similarity of variable profiles across pairs of children.

From this matrix a principal components solution was obtained using computer program BMD 03M (Dixon, 1965). A scree test was performed in order to determine the number of factors for a parsimonious, yet complete solution (Cattell, 1966). The scree suggested four factors which together accounted for 47 percent of the variance.

A principal factor solution was obtained, assuming four factors and using squared multiple correlation coefficients to provide communality estimates.

It should be noted that for the present analysis factor loadings are interpretable as the degree to which each child typifies the trait corresponding to the factor dimensions. The loading of each child on each of the four factors is presented in Table XV.

In order to interpret the four factors, Pearson or biserial correlation coefficients were computed between (a) the factor loadings

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* Appreciation is gratefully acknowledged to Herbert C. Richards, Jr. and Pedro Saavedra for assistance in conducting and interpreting the Q analysis.

and (b) the 3 demographic variables (class, sex, and age) and, after eliminating several low frequency variables, each of the 38 pupil behavior variables. Resulting factor loadings for each of the variables on each of these four unrotated factors are presented in Table XVI. The following interpretation can be made by arbitrarily selecting $\pm$ 0.40 as a minimal loading of significance:

1. Factor I - adult versus peer contact. Compared to others, children loading high on this factor tended to be older; more in contact with adults, especially as part of a group of children and in a listening-watching role; more cooperative or attentive in what they were supposed to be doing; more involved with audio visual equipment; less in contact with peers, either in initiating contact or in cooperative interaction; less task involved overall; less involved with divergent tasks; less involved in number use, with puzzles, or with arts and crafts.
2. Factor II - distracted versus purposeful attention. Compared to others, children loading high on this factor tended to be more in contact with peers; more distracted generally, less task involved and less cooperative or attentive in what they were supposed to be doing; less involved with either divergent or convergent tasks; less active in low level physical activity;
3. Factor III - error factor, i.e. difficult to interpret. Compared to others, children loading high on this factor tended to initiate less adult contact; be less involved in routine work tasks; be more active in low level physical activity but less involved in

gym or exercise activities or in medium level activities involving locomotion; be more involved with art materials and puzzles, but less involved in crafts.

4. Factor IV - passive versus active. Compared to others, children loading high on this factor tended to be in class B; more sedentary (sitting or standing still); less involved in gym and exercise; less involved with food and water; less involved in kinesthetic activity; less distracted; less responsive to internal stimuli; more involved with musical instruments.

The figure below shows the distribution of children according to their loadings on the three interpretable factors (I, II, IV). Children were considered high on a particular factor if their loading was +0.30 or greater; low, if their loading was -0.30 or greater in the negative direction; and medium, if their loading was between +0.30 and -0.30. Loadings for factors I and II are indicated by the vertical and horizontal axes respectively, whereas factor IV is indicated by a symbol (H,M,L) standing for high, medium or low.

Factor II

Factor I	Hi	Med.	Lo
Hi	L	MLH MH	M
Med.	MH	LMH M	MMH
Lo.	M	MMH M	LMH

Each symbol represents one child. Thus, the child in the upper left cell was high on factors I and II and low on factor IV.

A profile of each child based on these three factors is also presented in Table XVII. The sex and class are also included. It is readily apparent that a considerable diversity of pupil behavior was observed from one child to another.

Sex differences were not significant. Age, however, apparently contributed to a greater extent to the factor loadings. Older children were in significantly greater contact with adults, rather than peers ($r = 0.53$), and were less distracted and more attentive to what they were supposed to be doing ($r = 0.35$).

Among the three factors, the only significant differences between the two classes of children were found on factor IV. Children in teacher B's class were considerably more sedentary ($r = 0.47$) than those in teacher A's room, probably reflecting again differences in what these teachers expected and condoned.

SUMMARY

Three weeks of data gathering with a variety of observational procedures provided an extensive empirical description of many instructional and learning activities. Both teacher and pupil behaviors were observed in considerable detail. The greatest amount of data came from two classrooms and from stratified random samples of children in these rooms. Thus, it was possible to compare teacher and pupil behaviors in these rooms and to examine similarities and differences

among children as well as age, sex, and classroom differences.

Several findings seem especially noteworthy. (1) Certain teacher expectancies were apparent in directions given and behavior reinforced. For example, children were generally expected to have something to do; to finish one task before starting another; to have something tangible for showing or telling about as a result of time spent; to care for materials and return them to their proper places after their use; and to participate in group discussions. (2) For approximately half of each school day children were involved in projects and activities of their own choosing, while their teachers provided general supervisory and tutorial assestance. (3) Overall, listening to children and raising questions about their activities and progress on various tasks was the most dominant type of teacher activity during these periods, although (4) some teacher differences were apparent in the amount of showing-telling and controlling behavior they exhibited in contrast to listening and questioning. The specific style of questioning by teacher A was analyzed in some detail.

Among the several findings reported about pupil behavior, perhaps the most important pertains to the distribution of their interactions with adults, peers, and tasks. (5) Over the entire school day they interacted with an adult 29.3 percent of the time, on the average; a peer, 20.4 percent; with appropriate tasks, 28.2 percent; and they were distracted, responding to internal stimuli or working on inappropriate tasks 22.1 percent of the time. (6) In each classroom

they were involved with tasks which permitted divergent responses to be made more than any other type of task. (7) a Q analysis of pupil behavior identified four factors, three of which were clearly interpretable.

Discussion of these and other findings is presented in the main body of the paper. Determining how typical this particular infant school is of other British primary schools or how different it is from other types of early childhood schools remains an important problem for future research.

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TABLE I

Teacher Role Categorizations In Two Classrooms

(based on cycle category set #2 of PROSE with several categories combined)

T role categories	Teacher A f	Teacher A (%)	Teacher B f	Teacher B (%)	Totals f	Totals (%)
Supervisor, manager act as a resource	71	(69.6)	46	(52.9)	117	(62.0)
Show, tell, lead	7	(6.9)	22	(25.3)	29	(15.3)
Discussion leader	13	(12.8)	5	(5.7)	18	(9.5)
Housekeeping, providing individual attention, acting as a peer, listening and watching	3	(2.9)	1	(1.1)	4	(2.1)
Not in contact with Children	8	(7.8)	13	(15.0)	21	(11.1)
Not categorized*	6		21		27	
Total No. of cycles	108		108		216	

* 0 omissions in completing sheet were assumed to be not in accordance with any systematic bias. Percentages were calculated for teacher comparison purposes from all categorized cycles.

TABLE II

Teacher Behavior In Two Classrooms During Moments Of Target-Child With Teacher Contact

(based on category set no. 3 of PROSE)

T behavior category	Teacher A f	Teacher A %	Teacher B f	Teacher B %	Totals f	Totals %
Exhibit positive affect	0	(0)	0	(0)	0	(0)
Grant permission, encourages child choice	5	(5.4)	2	(1.6)	7	(3.3)
Show-tell	18	(19.6)	42	(35.0)	60	(28.3)
Listen-question	54	(58.7)	32	(26.8)	86	(40.6)
Do for a child or children	0	(0)	5	(4.2)	5	(2.4)
Control a child or children	15	(16.3)	37	(30.8)	52	(24.5)
Exhibit negative affect	0	(0)	2	(1.6)	2	(0.9)
Total occurrences	92	(100.0)	120	(100.0)	212	(100.0)

TABLE III

Types Of Questions And Comments By Teacher A During Two Approximately 10 Minute Intervals Within a "Show And Tell" Discussion

Type of Question or Comment		First Interval		Second Interval	
No.	Description	f	%	f	%
1	asks child for news	4	5	4	6
2	repeat C's statement or feeling or asks child what he said again	13	15	13	19
3	asks for specific information about the event, child, or family	33	38	21	30
4	asks open endedly for more detail	0	0	0	0
5	asks for C's reaction or feeling	3	4	3	4
6	asks other children whether they've had similar experiences	3	4	3	4
7	makes evaluation of events	2	2	6	9
8	gives information herself	3	4	11	16
9	speculates on event details	8	9	0	0
10	makes spontaneous reaction	9	10	6	9
11	other T comments	8	9	2	3
Total of audible comments		86	100	69	100

TABLE IV

The Number Of Cycles Characterized Predominantly By Particular Content Areas

(based on cycle category set #1 of PROSE)

Content Area	Teacher A	Teacher B
Arithmetic	0	2
Art or craft	1	0
Exercise or physical games	5	1
Free play (independent activity)	53	55
Health, hygiene	1	0
Language	20	23
Music, rhythms	0	10
Rest or snack**	0	0
Routine, transition	14	10
Science	11	0
Sensation	0	0
Social Skills	0	0
Social studies	1	0
Assembly*	1	3
Not recorded*	1	4
	108	108

* Added categories to account for all cycles

** [illegible]en drank milk or otherwise snacked whenever they chose after snack [illegible] were delivered to the room during independent [illegible] periods. The observer did not record behavior during the 1 1/2 lunch and recreation period because many children went home during this time.

TABLE V

Estimates Of Class Atmosphere In Numbers Of Cycles

(based on cycle category set #5 of PROSE)

Atmosphere category	Teacher A	Teacher B
Attentive excited	0	2
Attentive tense	0	0
Noisy excited	15	4
Noisy busy	49	58
Quiet busy	18	23
Quiet idle	4	2
Not estimated	22	19
	108	108

TABLE VI

The Number And Type Of Approval-Disapproval Teacher Behaviors

During A 20 Minute Observation

Teacher	Type of Approval				Type of Disapproval			
	Contact	Verbal	Gesture	Total	Contact	Verbal	Gesture	Total
A	4	13	7	24	1	6	0	7
B	0	11	0	11	0	0	0	0
C	0	6	0	6	0	11	0	11
D	2	8	1	11	0	3	0	3
	6	38	8	52	1	20	0	21

TABLE VII

The Number Of Classifications Of Each General Type Of Behavior For Each Target Child

Child	Adult Contact	Peer Contact	Task Involved	Distracted Etc.	
A-B1	19	5	7	14	
A-B2	19	0	8	18	
A-B3	8	15	11	11	
A-B4	13	4	15	13	
A-B5	15	11	12	7	
A-B6	9	16	14	6	
A-G1	5	13	21	6	
A-G2	12	8	17	8	
A-G3	8	11	16	10	
A-G4	18	10	9	8	
A-G5	14	4	20	7	
A-G6	19	3	4	19	
Subtotals Class A	159	100	154	127	
B-B1	33	2	2	8	
B-B2	4	15	13	13	
B-B3	13	5	11	16	
B-B4	9	19	0	17	
B-B5	11	11	12	11	
B-B6	11	3	23	8	
B-G1	2	16	22	5	
B-G2	8	11	20	6	
B-G3	21	2	18	4	
B-G4	23	7	4	11	
B-G5	18	7	15	5	
B-G6	5	22	11	7	
Subtotals Class B	158	120	151	111	
Totals both classes	317	220	305	238	1080

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE VIII

The Number Of Classifications Of Each Specific Type Of Adult Contact For Each Target Child

(based on PROSE category #1)

Child	C initiated	Star	Part of group	Listen-watch	Total
A-B1	1	5	7	6	19
A-B2	0	1	11	7	19
A-B3	0	0	6	2	8
A-B4	3	1	9	0	13
A-B5	8	0	7	0	15
A-B6	2	0	4	3	9
A-G1	0	0	5	0	5
A-G2	0	2	5	5	12
A-G3	5	0	3	0	8
A-G4	1	1	16	0	18
A-G5	3	0	4	7	14
A-G6	1	0	13	5	19
Subtotals Class A	24	10	90	35	159
B-B1	1	0	26	6	33
B-B2	0	0	4	0	4
B-B3	1	0	10	2	13
B-B4	0	1	3	5	9
B-B5	1	1	7	2	11
B-B6	0	2	5	4	11
B-G1	0	0	2	0	2
B-G2	1	0	6	1	8
B-G3	2	1	18	0	21
B-G4	0	0	21	2	23
B-G5	3	0	9	6	18
B-G6	0	0	4	1	5
Subtotals Class B	9	5	115	29	158
Totals both classes	33 (10.4)	15 (4.7)	205 (64.7)	64 (20.2)	317 (100)

* The first row of entries relates to boy 1 in teacher A's classroom.

TABLE IX

The Number Of Classifications Of Each Specific Type Of Peer Contact For Each Target Child

(based on PROSE category set #4)

Child	Behavior Type						
	Aggression	Initiation	Cooperation	Withdrawal	Resistance	Not Rec.	Total
A-B1	0	2	3	0	0	0	5
A-B2	0	0	0	0	0	0	0
A-B3	2	9	4	0	0	0	15
A-B4	1	3	0	0	0	0	4
A-B5	0	6	5	0	0	0	11
A-B6	0	7	8	0	1	0	16
A-G1	0	4	8	0	1	0	13
A-G2	1	0	7	0	0	0	8
A-G3	0	2	9	0	0	0	11
A-G4	0	2	8	0	0	0	10
A-G5	0	2	2	0	0	0	4
A-G6	0	3	0	0	0	0	3
Subtotals Class A	4	40	54	0	2	0	100
B-B1	0	0	2	0	0	0	2
B-B2	0	2	12	0	1	0	15
B-B3	0	1	3	1	0	0	5
B-B4	0	4	15	0	0	0	19
B-B5	0	4	7	0	0	0	11
B-B6	0	2	1	0	0	0	3
B-G1	2	4	9	0	0	1	16
B-G2	0	3	7	0	0	1	11
B-G3	0	1	1	0	0	0	2
B-G4	2	1	3	0	1	0	7
B-G5	0	1	6	0	0	0	7
B-G6	1	7	14	0	0	0	22
Subtotals Class B	5	30	80	1	2	2	120
Totals both classes	9	70	134	1	4	2	220

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE X

The Number Of Classifications Of Each Type Of Pupil Attention With Respect To Ongoing Activities

(based on PROSE category set #8)

Child	Behavior Type					
	Cooperating	Distracted	Responding To Internal Stimuli	Working on Other Activity	Disruptive	Total Categorization
A-B1	25	1	13	0	0	39
A-B2	27	8	10	0	0	45
A-B3	19	7	4	0	0	30
A-B4	26	5	8	0	0	39
A-B5	27	1	6	0	0	34
A-B6	21	2	3	1	0	27
A-G1	25	5	1	0	0	31
A-G2	26	6	2	0	0	34
A-G3	21	4	6	0	0	31
A-G4	25	1	3	4	0	33
A-G5	31	3	4	0	0	38
A-G6	20	7	12	0	0	39
Subtotals Class A	293	50	72	5	0	420
B-B1	34	5	3	0	0	42
B-B2	15	4	8	1	0	28
B-B3	23	8	8	0	0	39
B-B4	6	13	4	0	0	23
B-B5	19	6	5	0	0	30
B-B6	30	2	6	1	0	39
B-G1	25	1	4	0	0	30
B-G2	27	1	5	0	0	33
B-G3	35	3	1	0	0	39
B-G4	27	7	4	0	0	38
B-G5	32	5	0	0	0	37
B-G6	16	2	5	0	0	23
Subtotals Class B	289	57	53	2	0	401
Totals both class	582	107	125	7	0	821

* The first row of entries relates to boy 1 in teacher A's classroom.

TABLE XI

The Number Of Classifications Of Each Type Of Task For Each Target Child (based on PROSE category set #10)

Child	Type of Task					
	Fantasy	Divergent	Convergent	Work	Kinesthetic	Totals
A-B1	0	8	0	0	3	11
A-B2	0	8	4	0	7	19
A-B3	0	16	3	1	5	25
A-B4	0	8	13	1	6	28
A-B5	0	15	0	2	4	21
A-B6	0	0	2	10	5	17
A-G1	0	6	10	0	6	22
A-G2	1	7	12	4	0	24
A-G3	0	4	12	2	0	18
A-G4	5	13	1	0	0	19
A-G5	0	4	3	14	0	21
A-G6	0	1	4	4	2	11
Subtotals Class A	6	90	64	38	38	236
B-B1	5	2	0	1	0	8
B-B2	4	9	1	0	3	17
B-B3	8	2	10	3	1	24
B-B4	0	0	0	0	2	2
B-B5	0	5	5	3	1	14
B-B6	0	9	13	0	1	23
B-G1	0	14	2	3	0	19
B-G2	0	16	1	1	4	22
B-G3	2	1	15	0	0	18
B-G4	1	7	1	0	0	9
B-G5	1	6	5	3	6	21
B-G6	0	2	4	3	3	12
Subtotals Class B	21	73	57	17	21	189
Totals both classes	27 (6.3)	163 (38.4)	121 (28.5)	55 (12.9)	59 (13.9)	425 (100.0)

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE XII

The Number Of Categorizations Of Each Level Of Physical Activity And Presence Or Absence Of Locomotion For Each Target Pupil

(based on PROSE category set #9)

Child	High with locomotion	Medium with locomotion	High, no locomotion	Medium, no locomotion	Low	No Activity
A-B1	7	0	0	0	6	32
A-B2	0	1	0	2	18	24
A-B3	5	8	0	1	8	23
A-B4	4	5	0	6	6	24
A-B5	3	8	0	4	4	26
A-B6	5	2	0	1	6	31
A-G1	3	2	5	3	16	16
A-G2	6	3	0	5	12	19
A-G3	0	5	0	0	12	28
A-G4	7	5	1	0	12	20
A-G5	1	10	0	0	6	28
A-G6	0	6	0	1	15	23
Subtotals Class A	41	55	6	23	121	294
B-B1	0	1	0	1	1	42
B-B2	0	2	0	2	10	31
B-B3	14	6	0	1	7	17
B-B4	4	3	0	2	5	31
B-B5	0	13	0	1	7	24
B-B6	0	2	0	0	15	28
B-G1	4	6	0	1	16	18
B-G2	0	4	0	3	13	25
B-G3	0	3	0	3	10	29
B-G4	0	0	0	0	7	38
B-G5	1	3	0	3	9	29
B-G6	0	6	0	1	5	33
Subtotals Class B	23	49	0	18	105	345
Totals both classes	64 (5.9)	104 (6.9)	6 (0.5)	41 (3.8)	226 (21.0)	639 (59.1)

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE XIII

The Frequencies Of Occurrence Of Selected Task Related Specific Behaviors For Each Target Child. (based on PROSE cycle category #6)

Child	Specific Behaviors		
	Used numbers	Used words	Performed chore, errand
A-B1	3	0	0
A-B2	0	0	0
A-B3	4	0	0
A-B4	3	0	0
A-B5	5	0	0
A-B6	2	0	0
A-G1	3	1	0
A-G2	3	0	0
A-G3	5	0	0
A-G4	4	0	0
A-G5	2	0	0
A-G6	3	0	0
Subtotals Class A	37	1	0
B-B1	1	0	0
B-B2	5	0	0
B-B3	2	1	0
B-B4	4	0	0
B-B5	2	0	0
B-B6	1	2	0
B-G1	3	1	0
B-G2	3	0	1
B-G3	2	1	0
B-G4	2	0	0
B-G5	2	0	0
B-G6	6	1	0
Subtotals Class B	33	6	1
Totals both classes	70	7	1

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE XIV

The Frequencies In Cycles Of Specific Equipment And Material Usage By Each Target Child

(based on PROSE cycle category #8)

Child	Art mat'l	Craft	Music instr.	Books, writing	Puzzles, quiet games	Blocks	Wheel Toys	Tools wk.bn.	Sand	Gym exercise	Pet	Clothes, jewelry	Food water	Dolls	Home making	Cleanup tools	AV equip.	Spec. instr.device	Science Equip.	
																	1			A-B1
A-B1	1			3									1				1		1	A-B2
A-B2				2																A-B3
A-B3	2	1		2		1				2			1				1			A-B4
A-B4		1		2		1				2										A-B5
A-B5	1	1		1		1		1		2										A-B6
A-B6				1		1				1								1		A-G1
A-G1	2			1						2			1					1		A-G2
A-G2			1	3	1	1				1				1			1			A-G3
A-G3	1			2									1	1	1					A-G4
A-G4	2			3		1														A-G5
A-G5				2		1							1				1			A-G6
A-G6																				
Subtotals Class A	9	3	1	22	1	7	0	1	0	8	0	0	5	2	1	0	5	2	1	
B-B1				2													2			B-B1
B-B2	2			2	2				1				1				1			B-B2
B-B3	1			2		1					1		1							B-B3
B-B4			1	1		2							1							B-B4
B-B5	1	1	1	2																B-B5
B-B6	1			4	2	1														B-B6
B-G1	3			1	2				1			1								G-G1
B-G2	3			1	1								1				1	1		G-G2
B-G3		1	1	2									1					1		G-G3
B-G4	1	1	1	3					1		1									G-G4
B-G5	1		1	1	1							1	1			1				G-G5
B-G6				3																G-G6
Subtotals Class B	13	3	5	24	8	4	0	0	3	0	2	2	6	0	0	1	4	2	0	
Totals both classes	22	6	6	46	9	11	0	1	3	8	2	2	11	2	1	1	9	4	1	

(The first row of entries represents boy 1 in teacher A's classroom.

TABLE XV

Childrens Loadings on Each of Four Factors

Child	Factors I	II	III	IV
A-B1	.38	.14	.38	-.01
A-B2	.69	-.08	.20	-.40
A-B3	-.55	.20	-.12	-.03
A-B4	.21	-.16	-.46	-.60
A-B5	-.34	-.03	-.59	-.17
A-B6	-.34	.25	-.55	.08
A-G1	-.36	-.34	.08	-.39
A-G2	.02	-.39	-.12	.19
A-G3	-.19	.17	.03	-.28
A-G4	-.19	-.16	.41	.23
A-G5	.15	-.11	-.47	.28
A-G6	.53	.41	.08	-.45
B-B1	.72	.08	.10	.33
B-B2	-.59	.17	.51	-.03
B-B3	.32	.06	.22	-.29
B-B4	-.10	.76	-.01	.08
B-B5	-.14	.31	-.27	.33
B-B6	.06	-.58	.37	.10
G-G1	-.71	-.35	.31	.05
B-G2	-.58	-.51	.14	-.08
B-G3	.52	-.39	-.15	.19
B-G4	.43	.22	.18	.46
B-G5	.22	-.39	-.44	.34
B-G6	-.58	.47	.09	.15

*The first row of entries relates to boy 1 in teacher A's classroom.

TABLE XVI

Correlation of Q-Factor Loadings with Each of the Variables
(unrotated factors)

Variable Type	Variables	Factors I	II	III	IV
Demographic	Class	-.04	-.01	.31	.47
	Sex	-.10	-.31	.03	.20
	Age	.53	-.35	.13	.30
Category Sets	1. Adult Contact	.86	-.01	-.03	.26
	2. Peer Contact	-.86	.40	-.01	.12
	3. Task Involved	-.42	-.76	-.16	-.08
	4. Distracted	.39	.57	.30	-.48
Adult Contacts	5. Initiated	.00	-.06	-.61	-.17
	6. Star	.29	-.09	.27	.04
	7. Part of group	.69	-.02	.14	.26
	8. Listen-watch	.59	.11	-.07	.21
Peer Contact	9. Aggression	-.26	.03	.07	.14
	10. Initiation	-.68	.37	-.33	-.11
	11. Cooperation	-.72	.36	.12	.21
Pupil Attention	12. Cooperating	+.47	-.75	-.16	+.19
	13. Distracted	+.35	.48	-.03	-.14
	14. Response to internal stimuli	.25	.33	.36	-.56
	15. Total attention ongoing activities	.83	-.43	.06	-.15
Task	16. Fantasy	.23	-.02	.37	.12
	17. Divergent	-.47	-.45	.18	-.08
	18. Convergent	.19	-.44	-.14	-.30
	19. Work	-.00	.11	-.57	.18
	20. Kinesthetic	-.13	-.04	-.32	-.50
	21. Total task involvement	-.23	-.70	-.25	-.36
Physical Activity	22. High, locomotion	-.04	.02	.06	-.19
	23. Medium, locomotion	-.33	.16	-.41	.01
	24. High, no locomotion	-.18	-.22	.01	-.26
	25. Medium, no locomotion	-.04	-.34	-.46	-.35
	26. Low	-.10	-.49	.40	-.37
	27. No activity	.29	.37	.01	.49

Cycle Categories #6	28. Used #s	-.67	.36	.04	-.13
	29. Used words	-.10	-.38	.30	-.03
	30. Art materials	-.63	-.36	.40	-.02
	31. Craft	.06	.06	-.41	.05
	32. Music Instruments	.24	.05	-.23	.54
Cycle Categories #8	33. Books, writing	.14	-.15	.39	.36
	34. Puzzles	-.49	-.33	.49	.10
	35. Blocks	-.11	.16	-.28	-.02
	36. Gym	-.17	-.20	-.55	-.45
	37. Food, water	.32	.31	.06	-.48
	38. AV equipment	.70	.09	+,14	-.32

TABLE XVII

Pupil Profiles by Loadings on Three Factors

Child	Class	Sex	Factor I Adult Oriented	Factor II Inattentive	Factor IV Passive
A-B1	A	M	high	medium	medium
A-B2	A	M	high	medium	low
A-B3	A	M	low	medium	medium
A-B4	A	M	medium	medium	low
A-B5	A	M	low	medium	medium
A-B6	A	M	low	medium	medium
A-G1	A	F	low	low	low
A-G2	A	F	medium	low	medium
A-G3	A	F	medium	medium	medium
A-G4	A	F	medium	medium	medium
A-G5	A	F	medium	medium	medium
A-G6	A	F	high	high	low
B-B1	B	M	high	medium	high
B-B2	B	M	low	medium	medium
B-B3	B	M	high	medium	medium
B-B4	B	M	medium	high	medium
B-B5	B	M	medium	high	high
B-B6	B	M	medium	low	medium
B-G1	B	F	low	low	medium
B-G2	B	F	low	low	medium
B-G3	B	F	high	low	medium
B-G4	B	F	high	medium	high
B-G5	B	F	medium	low	high
B-G6	B	F	low	high	medium

* high is equal or greater than +0.30; medium is between +0.30 and -0.30; low is equal to or greater than -0.30.